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The Role of Corporate Governance in Enhancing Environmental and Social Performance

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ABSTRACT

This study investigates how different corporate governance (CG) approaches influence firms' environmental and social performance, specifically focusing on the role of internal vs. external resources and operational vs. strategic approaches. Anchored in stakeholder and resource dependency theory, we develop a conceptual framework grounded in the dual mechanisms of exploration and exploitation. These mechanisms differentiate CG approaches into external advisors and independent directors (exploration), internal sustainability teams, and board sustainability committees (exploitation). We test this framework on a sample of 269 listed European manufacturing firms. Through a two-stage methodology combining content and cluster analysis and multiple regression, we identify four distinct CG approaches and evaluate their effectiveness. Results reveal that firms adopting internal and external strategic CG approaches, blending board sustainability committee, internal sustainability team, and external expertise, achieve significantly higher environmental and social performance. Our findings show how firms can structure CG to embed sustainability into strategy, offering implications for managers, investors, and policymakers.

1 | Introduction

Over the last few decades, environmental and social issues have become increasingly relevant due to global awareness and stakeholders' pressure (Clément et al. 2023; Zumente and Bistrova 2021). On the one hand, environmental and social issues could enhance firms' reputations (Galletta et al. 2023), foster innovation (Hughes et al. 2021; Wang et al. 2021), and create a more sustainable (Ng 2021) and inclusive world (Rastogi et al. 2023). On the other hand, firms need to improve their environmental and social performance as it directly correlates with improved risk management (Nobanee et al. 2021), long-term financial results (Zhou et al. 2022), and competitive advancements (Hussain et al. 2018).

Recent research also points to the need for firms to move from symbolic environmental, social and governance (ESG) practices to more integrated governance mechanisms that drive real impact (Giannarakis et al. 2023; Rodríguez-Sanz et al. 2024). This growing relevance has also sparked the need for firms to develop specific competencies and maturity models to manage sustainability effectively (Lichtenthaler 2023). Ultimately, regulatory changes require enhancing environmental and social performance to create shared value, balancing economic growth with social and environmental considerations (Camilleri et al. 2023; Fatemi et al. 2018). Implementing an effective environmental and social strategy is, in fact, the responsibility of corporate governance (CG) (Ellili 2022a), which is crucial for monitoring progress, managing risks, ensuring ethical leadership, and achieving high environmental and social performance (Karwowski and Raulinajtys-Grzybek 2021; Khan 2019). Consequently, CG is responsible for a transformative journey that demands a huge amount of internal and

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external resources from the firms (Wöhrmann 2022; Eliwa et al. 2021).

Several theories have been used to examine environmental and social performance (Freeman et al. 2020; Velte and Stawinoga 2020), and recent literature has highlighted the strategic potential of dynamic capabilities, innovation processes, and transformative governance frameworks in driving sustainable outcomes (Shrivastava and Addas 2014; Cherrington et al. 2023). Environmental and social performance refers to measurable outcomes related to how firms manage environmental impacts (e.g., emissions, energy use) and social responsibilities (e.g., employee well-being, diversity, or community engagement). Building on this foundation, and to specifically explore the relationship between CG and sustainability performance, we draw on stakeholder theory and resource dependency theory.

Stakeholder theory posits that a firm is an integral part of a broader social system where mutual influence between the firm and society occurs and emphasizes the importance of the interests of all relevant stakeholders in decision-making processes (Huse 2003). The connections between CG and environmental and social performance, in fact, underscore the significance of incorporating diverse interests in corporate decision-making (Peng and Isa 2020). Such involvement fosters a broader representation of interests and concerns, helping to identify and address environmental and social issues relevant to the organization (Freeman et al. 2020; Velte and Stawinoga 2020). From this perspective, CG plays a key role in integrating environmental and social considerations into corporate decisions (Orazalin 2020; Uyar et al. 2021).

Resource dependency theory underscores the role of CG in securing essential resources, managing external relationships, and mitigating risks to ensure organizational stability and success (Hillman et al. 2009). Resource dependency theory posits that firms must obtain resources to survive, and the need to acquire these resources leads them to form relationships with external entities (Jiang et al. 2023). It highlights the importance of the board of directors and other governance mechanisms in managing these dependencies (Abdullah and Valentine 2009). In shaping their CG approaches to environmental and social issues and to provide the missing skills (Cardon and Stevens 2004), firms require competent and qualified resources, either developed internally (e.g., employees, middle managers, managers, or even Chief Sustainability Officer) or acquired externally (e.g., advisors, independent directors). Consequently, CG approaches can be defined as firm-level configurations of governance mechanisms that vary in their reliance on internal versus external resources, and in their operational or strategic orientation. Building on the distinction between resource exploration and resource exploitation (March 1991), we develop a framework to conceptualize how internal and external resources contribute to organizational processes. Exploration involves acquiring new skills and competencies in different areas of knowledge and experimenting with innovative solutions. On the other hand, exploitation focuses on gradually improving existing solutions and seeking efficiency within current areas of knowledge. These different mechanisms are not mutually exclusive (Lavie et al. 2010).

By adopting stakeholder theory and resource dependency theory and the concepts of resource exploration and resource exploitation, we aim to evaluate how various CG approaches to environmental and social issues influence firms' overall environmental and social performance. Existing studies often rely on general governance indices or board characteristics, offering limited theoretical depth and neglecting the differentiation between governance models based on organizational learning mechanisms such as exploration and exploitation (March 1991; Lavie et al. 2010). Moreover, few contributions have examined how CG configurations influence environmental and social outcomes through resource and stakeholder-oriented lenses, resulting in an incomplete understanding of how CG choices support sustainability goals. Recent reviews further note that sustainability research often relies on simplistic governance indicators, overlooking more complex configurations based on internal and external resource orientation and strategic scope (Giannarakis et al. 2023; Orazalin and Baydauletov 2020; Cherrington et al. 2023; Rodríguez-Sanz et al. 2024).

In summary, prior research has not clearly explained how different configurations of CG approaches, distinguished by their resource orientation and strategic scope, affect firms' environmental and social performance. To fill this gap, this study aims to answer the following research question (RQ): *How do various CG approaches to environmental and social issues, distinguished by their emphasis on resource exploration and/or resource exploitation, impact a firm's environmental and social performance?*

Accordingly, this study develops and empirically tests a multidimensional framework that links CG approaches to firms' environmental and social performance.

The empirical analysis focuses on 269 European publicly listed manufacturing firms, a sector selected for its high exposure to environmental and social pressures, stemming from intensive resource use, complex supply chains, and heightened stakeholder expectations (Awan et al. 2017). This choice allows for a more controlled analysis of CG approaches in a context where sustainability is both material and measurable. These dynamics are particularly relevant in the current industrial context, where the intersection of Industry 4.0 technologies and circular economy principles plays a crucial role in reshaping sustainability practices across global value chains (Awan et al. 2022). European firms are also subject to increasingly stringent sustainability regulations, such as the EU Taxonomy, Corporate Sustainability Due Diligence Directive (CSDDD) and especially the Corporate Sustainability Reporting Directive (CSRD), which increases transparency and accountability in ESG reporting (Nampoothiri et al. 2024). This growing regulatory pressure on sustainability, particularly in the manufacturing sector, exposes the limits of symbolic governance practices and increases the need for governance configurations that enable real transformation.

We adopted a two-stage methodology. In the initial stage, through a content and cluster analysis, we identified four groups of firms with homogeneous CG approaches to environmental and social issues, classified in terms of internal and/or external resources and operational or strategic orientation. In the final stage, we estimated a multiple linear regression to assess the impact of different CG approaches on environmental and social performance.

This research makes novel contributions to both the academic literature and practical applications.

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To the best of our knowledge, this is among the first studies that address a key gap in the literature by proposing and empirically validating a multi-dimensional framework of CG approaches, grounded in stakeholder theory, resource dependency theory, and the concepts of resource exploration and exploitation (March 1991; Lavie et al. 2010). While prior research has linked CG mechanisms to sustainability outcomes, it often lacks theoretical depth and relies on general governance indices or limited board characteristics. Our framework introduces a more nuanced perspective, defining CG configurations along internal vs. external resource orientation and operational vs. strategic focus, and connects governance design with organizational learning processes. In doing so, we build on and extend the work of Orazalin and Baydauletov (2020) and Giannarakis et al. (2023), offering a more granular understanding of how different CG approaches affect environmental and social performance.

Finally, the study offers actionable insights for managers, policymakers, and investors, helping them understand how governance configurations can be designed to meet growing sustainability expectations and foster long-term value creation.

2 | Corporate Governance as a Driver of Environmental and Social Performance

Prior research that analyses the relationship between CG approach and environmental and social performance often relies only on a single theory, despite the importance of incorporating theory triangulation (Zattoni et al. 2020). In particular, Zattoni et al. (2020) argued that the inconsistent results found in studies on CG and environmental and social performance can be attributed to the exclusive reliance on either agency theory or one of the "trinity theories." In addition, Nguyen et al. (2021) emphasized the importance of adopting a multi-theoretical approach to comprehend the effects of CG on outcomes. Furthermore, despite increasing attention to the relationship between CG and sustainability outcomes, existing studies typically rely on broad governance indices or individual board characteristics (Giannarakis et al. 2023). These approaches provide limited theoretical granularity and fail to capture the complex interplay between internal and external governance mechanisms, as well as their operational and strategic orientation (Orazalin and Baydauletov 2020). Moreover, current research rarely integrates organizational learning perspectives, particularly the exploration–exploitation dichotomy, with stakeholder and resource dependency theories (Cherrington et al. 2023; March 1991; Zattoni et al. 2020). As a result, the literature lacks a comprehensive framework to explain how different governance structures influence environmental and social performance (Nguyen et al. 2021; Zattoni et al. 2020).

Corporate governance is the mechanism by which firms are directed and controlled. It encompasses a framework of rules, processes, and organizational structures that serve as the basis for the effective functioning of a firm. It is designed to ensure the proper alignment of business operations with the interests of various stakeholders (Du Plessis et al. 2018). The three core activities within CG (i.e., administration, control, and disclosure) (Ellili 2022b) contribute to transparency (Hermalin and Weisbach 2007), accountability (Brennan and Solomon 2008), and effective decision-making (Cutting and Kouzmin 2000). Consequently, CG encompasses the rules and processes governing decision-making, providing guidance for achieving corporate objectives, and facilitating the attained results (Gilson 2001). Until the last century, CG studies mainly focused on managing conflicts between various groups within firms, such as shareholders, workers, and customers, without necessarily considering aspects related to sustainability or social responsibility (Orts and Strudler 2002). However, as we entered the twenty-first century, the scope of CG expanded beyond shareholders to encompass all stakeholders, involving a more comprehensive oversight of firms' activities, including their societal and environmental impacts (Naciti et al. 2021). Stakeholders have then assumed an increasingly pivotal role, compelling firms to enhance their sustainable practices and reevaluate their environmental and social impacts (Kujala et al. 2022).

Through stakeholder theory, management scholars have formalized the change in corporate focus, moving beyond shareholder interests to a broader and more complex perspective (Parmar et al. 2010). In particular, stakeholder theory emphasizes the firm's accountability to various societal stakeholders (Dmytriyev et al. 2021). The fundamental principle is that businesses should create value for all stakeholders in accomplishing a firm's objectives (Freeman, 2010; Dmytriyev et al. 2021). Hence, it is imperative for firms to collectively evaluate and harmonize stakeholders' desires (Freeman and Dmytriyev 2017; Parmar et al. 2010). Managers' primary responsibility is to generate shared advantages for all stakeholders rather than prioritizing the interests of shareholders.

Stakeholder theory posits that a firm is an integral part of society. The value created by a firm is evaluated according to its ability to meet specific societal expectations and environmental needs (McGahan 2021). While primary stakeholders wield immediate influence over the firm's destiny, such as the production of products and services, the claims of secondary stakeholders are more likely to impact entrepreneurial activities indirectly, influencing practices related to people, society, or the environment (Kujala et al. 2022). It is therefore crucial for management to effectively balance diverse interests and align corporate objectives with stakeholders', sometimes conflicting, demands. Consequently, stakeholder theory has increasingly integrated sustainability issues, such as environmental and social concerns, into its conceptual framework. It establishes a framework that connects CG with environmental and social issues (Kumar 2023): business practices that operate in isolation and neglect societal values and environmental requirements are deemed unsustainable in the long term (Missimer and Mesquita 2022). According to stakeholder theory, CG is responsible for fulfilling its legal responsibilities, managing stakeholders' concerns, and enhancing environmental and social performance (Freeman 2023; Freudenreich et al. 2020).

In conclusion, to consistently meet stakeholders' expectations and according to Stakeholder Theory, the importance of managing environmental and social issues emerges as an integral part

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of CG decisions to create sustainable environmental and social value (Freeman 2023; Freudenreich et al. 2020).

To strengthen the theoretical foundation, this study emphasizes resource dependency theory, which, we argue, is especially pertinent for understanding how CG structures shape firms' operational and strategic responses to sustainability challenges. This theory offers a powerful lens for investigating the governance mechanisms that drive sustainability outcomes (Islam et al. 2022). CG, thanks to contributions made by directors, offers firms specialized knowledge and a wide range of abilities and resources that could be highly beneficial in tackling environmental and social issues (Godos-Díez et al. 2018). Boards, in fact, are structured to include members who can provide access to critical resources, such as capital, information, and connections. Members might consist of individuals with industry expertise, political influence, or links to other key organizations. CG, and particularly the external directors, can provide critical information for the firm, skills, advice and guidance, improve the firm's reputation and credibility, establish channels of communication with external stakeholders, and offer favorable evaluations of specific resources or external support (Hillman and Dalziel 2003; Rodríguez-Sanz et al. 2024). Furthermore, boards can influence and control resource flows by aligning organizational strategies with resource acquisition and allocation. This involves ensuring that the organization remains adaptable and responsive to external changes and pressures (Oliveira et al. 2022).

An effective CG can manage the risks associated with resource dependencies (Ozturk 2021). This includes diversifying resource sources and maintaining a balance of power with key stakeholders. By managing external dependencies well, firms can enhance their sustainability and longevity. Boards, therefore, play a crucial role in ensuring that the organization remains resource-sufficient (Hillman et al., 2023).

Summarizing, according to stakeholder and resource dependency theory, we argue that the characteristics of the firm's CG approach are fundamental determinants of its environmental and social performance. This is particularly evident in the manufacturing sector, where firms often face complex operational structures, limited internal ESG competencies, and fragmented governance arrangements (Zattoni et al. 2020; Michelon and Parbonetti 2012). In many cases, governance mechanisms remain symbolic, focused on compliance and reporting, rather than strategically integrated into decision-making. Resource dependency theory highlights that such deficiencies can hinder the firm's ability to acquire and mobilize critical environmental and social resources, ultimately limiting its capacity to adapt to stakeholder demands and regulatory expectations, as stakeholder theory highlights. These issues underscore the need for CG approaches that meet disclosure requirements and facilitate internal learning and organizational change.

3 | Theoretical Foundations

The CG approach is responsible for managing environmental and social issues within a firm, and it can vary considerably from one organization to another (Cadman 2011). This variability is influenced by several factors, including CG traditions, self-regulatory codes, and firm-specific choices (Cankar 2005). Additionally, it may differ depending on a firm's experience, size, age, industry, and geographic location.

In this research, we characterize the CG approach to environmental and social issues by contrasting the two opposites, yet not mutually exclusive, mechanisms of organizational learning based on resource exploration and resource exploitation (March 1991). Exploration and exploitation have become common concepts for categorizing and interpreting firm behavior and organizational learning (Lavie et al. 2010). While exploration entails acquiring additional skills and competencies in new knowledge domains and experimenting with innovative solutions, exploitation is centered on incrementally refining existing solutions and seeking efficiency within current knowledge domains. March stresses that "both exploration and exploitation are essential for organisations, but they compete for scarce resources. As a result, organisations make explicit and implicit choices between the two" (March 1991).

Building upon resource dependency theory, we integrate the concepts of exploration and exploitation, which we conceptualize not simply as modes of organizational learning, but as distinct CG configurations based on the origin of resources (internal vs. external). Formulated initially by Salancik and Pfeffer (1978), resource dependency theory posits that organizations depend on external actors and resources for survival and performance, and that governance structures evolve as strategic responses to manage such dependencies. In the context of sustainability, resource dependency theory suggests that firms structure their boards, committees, and external engagements to ensure access to critical environmental and social resources, reduce uncertainty, and maintain legitimacy in their institutional environment (Hillman et al. 2009). This theoretical framework provides a robust basis for understanding how CG approaches are shaped to access, integrate, and utilize key resources through exploration and exploitation dynamics, ultimately enhancing environmental and social performance.

3.1 | Resource Exploration

Exploration-oriented CG approaches reflect an openness to external knowledge, expertise, and innovation (Lavie et al. 2010; Zattoni et al. 2020). These configurations involve the inclusion of independent directors, external advisors, and domain experts who serve as boundary-spanning agents, facilitating the acquisition of novel resources and perspectives. Within the lens of resource dependency theory, these actors are seen as essential to navigating institutional complexity, managing uncertainty, and acquiring legitimacy in the face of evolving environmental and social expectations (Ozturk 2021).

Independent directors occupy a unique position on the board: they are formally part of the governance structure but remain detached from day-to-day management and controlling shareholders. This structural independence enables them to offer critical oversight and strategic input, particularly on complex, long-term issues such as sustainability (Patelli and Prencipe 2007). They bring professional experience, technical skills, and external

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connections that broaden the board's vision and mitigate managerial opportunism (Pucheta-Martínez and Gallego-Álvarez 2019). Numerous empirical studies support their positive influence on environmental and social performance (Biswas et al. 2018; Hussain et al. 2018), although other findings remain inconclusive (García Martín and Herrero 2020; Uyar et al. 2021; Orazalin and Mahmood 2021).

External advisors also play a crucial role, particularly in the initial phases of ESG strategy implementation. They contribute specialized knowledge, methodological guidance, and benchmarks based on best practices across industries (Dasanayaka et al. 2022). Their contribution extends beyond technical assistance: By conducting external reviews, identifying inefficiencies, and offering objective evaluations, they support firms in aligning ESG efforts with strategic goals and enhancing transparency (Camilleri et al. 2023). These functions are especially relevant when internal competencies are limited or fragmented.

Both independent directors and external advisors provide critical human and relational capital that enhances a firm's capacity to engage in non-routine learning and manage institutional complexity. Their contributions go beyond compliance, helping firms design credible sustainability strategies, foster external legitimacy, and build resilient stakeholder relations (Nguyen et al. 2021; Hillman et al. 2009; Tricker 1984; Haniffa and Cooke 2005).

3.2 | Resource Exploitation

Within our theoretical framework, exploitation-oriented CG approaches prioritize efficiently using existing internal resources and established routines. These include internal sustainability teams and board sustainability committees, which are often tasked respectively with the operational and strategic implementation of ESG issues.

Building on resource dependency theory, exploitation mechanisms aim to consolidate control over decision-making and maintain alignment with organizational priorities, minimizing dependence on external actors (Hillman et al., 2000; Hillman et al. 2009). Such configurations are especially suitable in relatively stable environments, where predictable compliance and process optimization drive ESG performance (Fatemi et al. 2018). As firms gain experience and expertise in environmental and social issues, the advisors' role may become increasingly residual, parallel with hiring resources dedicated to building internal environmental and social capabilities. In this case, firms are resource exploiting. There may actually be cases where the team is composed solely of internal resources, and others where, in addition to internal resources, there are also external ones. Internal resources could be employees, middle managers, managers, or even chief sustainability officers, and they can be present alternately with each other or constitute a dedicated operational team. In certain cases, the board can set up an internal sustainability committee, whose primary responsibility is to oversee and guide the firm's environmental and social efforts and ensure that they align with the firm's overall strategy and values (Burke et al. 2019). The existence of an internal board committee or an individual overseeing sustainability issues at the board level indicates that the firm adopts a proactive strategy with stakeholders (Post et al. 2002). Typically tasked with reviewing policies and actions related to the firm's principles and commitment to sustainability issues, an internal committee actively reports social and environmental information (Post et al. 2002).

The establishment of an internal sustainability committee can be interpreted as an effective strategic CG resource for addressing stakeholder expectations, bridging the legitimacy gap, and enhancing environmental and social performance. By overseeing the quality of stakeholder engagement and sustainability reporting policies, such an internal committee embodies an exploitation-based learning mechanism that leverages internal knowledge and organizational routines.

Summarizing, it is possible to identify different CG resources defined by mechanisms of organizational learning based on resource exploration and resource exploitation. This articulation strengthens the study's theoretical foundation by showing how the resource management logic of resource dependency theory translates into a specific CG approach and helps explain the variance in performance based on the CG approach adopted. These CG approaches span from delegating environmental and social issues to external advisors (i.e., exploration) to establishing a dedicated board sustainability committee (i.e., exploitation). Table 1 provides a conceptual synthesis of how different CG resources, framed through the dual mechanisms of exploration and exploitation, can be interpreted through the lenses of resource dependency theory.

4 | Research Question

Scholars have dealt with measuring environmental and social performance,[1] highlighting the factors underlying good

TABLE 1 | CG resources framed by exploration–exploitation mechanisms and theoretical lenses.

Mechanism	CG resources	Resource origin	Resource dependency theory interpretation
Exploitation	Internal sustainability team, board sustainability committee	Internal	Firms rely on internal resources to reduce uncertainty and maintain control; committees consolidate ESG into internal routines and enhance internal capacity.
Exploration	Independent directors, external advisors	External	Governance structures are adapted to access critical external resources, expertise, and legitimacy in dynamic environments.

Abbreviation: CG, corporate governance.

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performance (Fatemi, 2018), but few correlate the different CG approaches.[2] Notwithstanding, CG is a meaningful predictor of a firm's environmental and social performance (Orazalin and Baydauletov, 2020; Biswas et al. 2018; Hussain et al. 2018). However, what remains underexplored is how distinct CG approaches influence such outcomes, particularly when viewed through the lens of resource exploration and exploitation. By linking configurations to the exploration–exploitation logic, we formulate our research question:

> RQ: How do various CG approaches to environmental and social issues, distinguished by their emphasis on resource exploration and/or resource exploitation, impact a firm's environmental and social performance?

Literature unanimously suggests that the CG approach significantly influences the quality of environmental and social performance provided to stakeholders (Claessens and Yurtoglu 2013; Iatridis 2012; Cong and Freedman 2011). In particular, Jacoby et al. (2019) recommend scrutinizing the composition of both governance bodies, the board of directors and the top executive team. Concurrently, other studies reveal that board characteristics are linked to environmental performance (Giannarakis et al. 2020; García Martín and Herrero 2020). Among others, board independence and the number of external directors positively impact environmental and social performance quality. Conversely, Patelli and Prencipe (2007) propose that many independent directors may have a negative or very limited effect on performance, positing that these directors are typically appointed by major shareholders who can strongly influence the decision.

Under the stakeholder theory, a committee is formulated to enhance the stakeholders' management (Pucheta-Martínez and Gallego-Álvarez 2019). Apart from Biswas et al. (2018), there seems to be a lack of empirical studies focusing on the impact of sustainability committees on environmental and social performance, along with their dimensions. Few studies adopting stakeholder theory have found that firms with a sustainability committee tend to have better social and environmental performance (see e.g., Michelon and Parbonetti 2012; Biswas et al. 2018; Hussain et al. 2018; García Martín and Herrero 2020; Orazalin 2020; Uyar et al. 2021), while few others provide evidence that the presence of a sustainability committee has no impact (Giannarakis et al. 2020). The presence of a sustainability committee improves the effectiveness of sustainability-related strategies and leads to better social and environmental performance (Hillman and Dalziel 2003; Orazalin 2020).

To operationalize our theoretical framework and ensure a coherent alignment between theory and empirical analysis, we derived CG mechanisms from the combination of resource dependency theory and the organizational learning lens of exploration and exploitation (March 1991; Lavie et al. 2010). Specifically, the relevance of internal resources, such as sustainability committees and internal sustainability teams, institutionalizes stakeholder concerns into organizational routines and reflects an exploitation logic (Hillman and Dalziel 2003; Pucheta-Martínez and Gallego-Álvarez 2019). These mechanisms rely on internal resources and aim to refine existing competencies and processes aligned with environmental and social goals. In contrast, the use of external governance channels, such as external advisors and independent directors, provides firms with access to strategic resources, external legitimacy, and novel knowledge, thus representing exploration-oriented mechanisms (Ozturk 2021).

In conclusion, to clarify these conflicting findings and address the lack of consensus in the literature, we conceptualize corporate governance as a set of mechanisms that vary along two key dimensions: resource origin (internal vs. external) and governance orientation (operational vs. strategic). The theoretical framework, illustrated in Figure 1, allows us to identify four distinct CG approaches. By linking these configurations to the exploration–exploitation framework, we explain how different CG approaches to environmental and social issues, distinguished by their emphasis on resource exploration and/or resource exploitation, affect a firm's environmental and social performance.

5 | The Empirical Setting

5.1 | Data and Methodology

This study adopts a quantitative, cross-sectional research design to examine the relationship between CG approaches and firms' environmental and social performance. The unit of analysis is the firm, and the observation year is 2022 for CG-related variables. A 1-year lag was applied to environmental and social performance and financial variables.

The sample consists of 269 publicly listed firms from the Eurozone operating in the manufacturing sector,[3] that have published a sustainability report, according to the Global Reporting Initiative (GRI) standards.[4] The manufacturing sector was selected due to its high environmental impact, regulatory exposure, and the relevance of sustainability practices in operational and strategic decision-making (Awan et al. 2017). Limiting the scope to the Eurozone ensures institutional comparability and consistency in disclosure obligations under EU regulations. According to Eurostat (2024), the manufacturing sector became the largest source of greenhouse gas emissions in the EU in 2023, accounting for nearly 694 million tons of CO_2 equivalents, which represents approximately 20% of the total emissions from the EU economy and households. As a result, manufacturing firms, whether directly covered by the regulation or indirectly involved as suppliers, face mounting pressure to align with these new standards. The CSRD and CSDDD, in particular, extend due diligence obligations and GHG emission disclosures across entire value chains. Although not directly regulated, many SMEs in the manufacturing sector are increasingly required to share ESG data with larger clients. Nevertheless, empirical studies suggest that many European firms still lack the internal ESG capabilities, governance maturity, and strategic integration needed to respond effectively (Niesten et al. 2024). In several cases, corporate governance mechanisms remain compliance-oriented or symbolic rather than enabling real transformation (Rodrigue et al. 2013). These challenges reinforce the importance of investigating how different CG configurations, particularly those leveraging both internal and external resources, can help firms navigate regulatory complexity and improve their environmental and social performance in a sector under intense institutional and stakeholder pressure.

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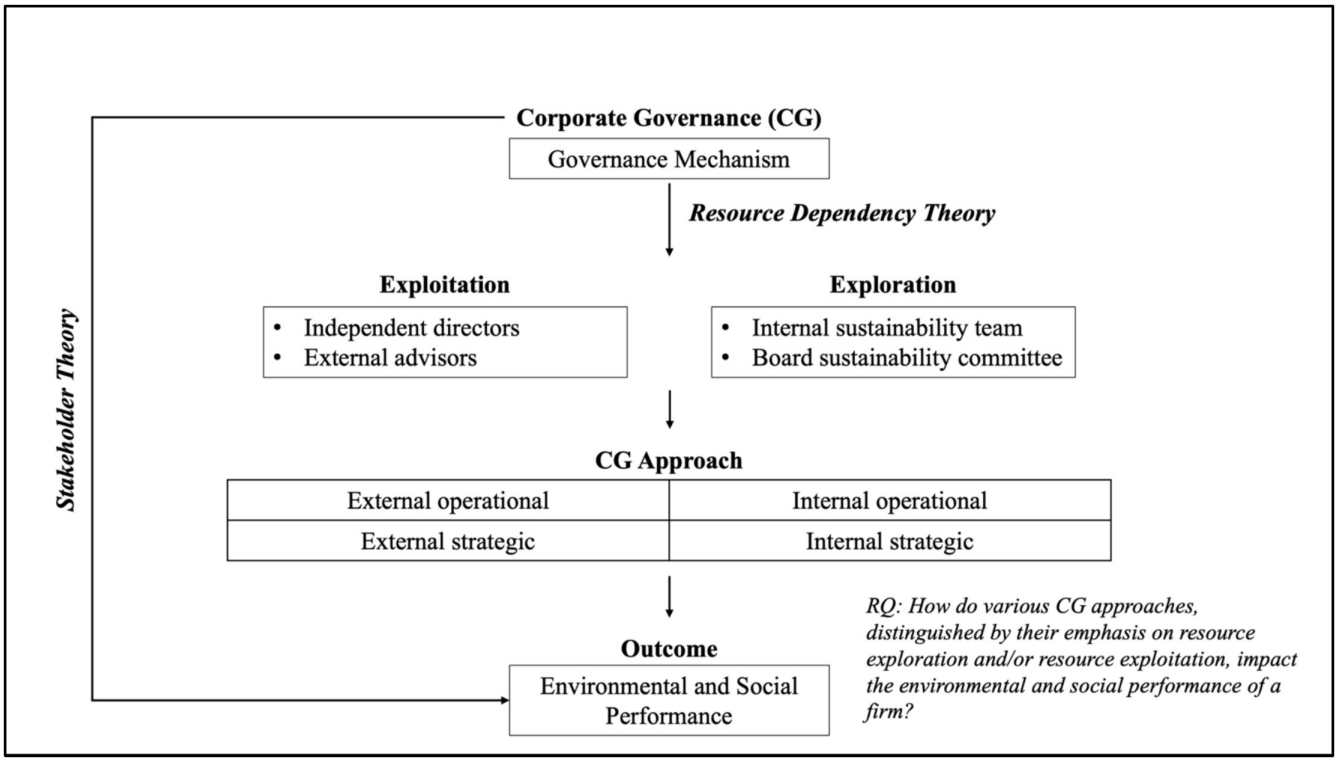

FIGURE 1 | Theoretical framework.

Firms that had not published a sustainability report were excluded to ensure data availability and comparability, particularly in the identification of CG practices related to environmental and social issues. Although this may introduce a selection bias, favoring firms more engaged in sustainability, this approach is aligned with the study's analytical focus: evaluating the quality and variation in CG approaches among firms that are already committed to sustainability disclosure. Moreover, GRI adoption is widespread among large, listed European firms, especially in sectors subject to high stakeholder scrutiny, such as manufacturing, which reinforces the relevance and representativeness of the sample (Papa et al. 2022).

The dataset was compiled through a consolidation process that involved three primary sources: corporate disclosures (i.e., sustainability reports, annual reports, corporate governance guidelines, and other pertinent documents) for CG variables, the Refinitiv datastream for environmental and social indicators, and Orbis for financial and economic data.

To identify firms' CG approaches, we relied on corporate disclosures. These sources offer detailed insights into governance practices and reflect how firms publicly frame their sustainability strategies. However, corporate disclosures are self-reported and may be influenced by reputational concerns, leading to potential risks of selective reporting or greenwashing. To mitigate this, we adopted a content analysis protocol to ensure consistency in how CG mechanisms were coded. Furthermore, the information collected from corporate disclosures was cross-validated with governance indicators from Refinitiv (i.e., CSR Sustainability Committee), which applies a standardized methodology to assess the presence and quality of specific governance practices. While some degree of reporting bias cannot be entirely ruled out, the use of multiple data sources and a structured coding approach enhances the reliability of the resulting CG classifications.

Environmental and social performance was assessed using Refinitiv's ESG Pillar Scores, which are based on multiple categories and reflect firm-level performance across a range of sustainability dimensions. These multidimensional scores are derived from publicly disclosed data and are recognized for methodological rigor and transparency (Gomes and Marsat 2018). Compared to aggregate CSR indices, this multidimensional approach allows for a more nuanced analysis of firm-level sustainable performance (Giannarakis et al. 2023).

The methodological framework comprises two stages. First, we conducted a content and hierarchical agglomerative cluster analysis to identify distinct CG configurations, using a classification based on two dimensions: (1) internal vs. external resource orientation, and (2) operational vs. strategic governance focus. In the second stage, we applied multiple regression models (Greene 2018) to evaluate the impact of the identified CG approaches on environmental and social performance, controlling for relevant firm-level factors. This empirical strategy is consistent with prior ESG literature (e.g., García-Sánchez et al., 2020).

5.2 | First Stage: Content and Cluster Analysis

The first stage of the methodology consists of two steps: First, we characterize the CG approaches through a manual content analysis of company disclosures, followed by a cross-check with Refinitiv data to ensure consistency and enhance data reliability. Second, we developed the cluster through an analysis of hierarchical agglomeration and a dendrogram (Johnson and Wichern 2007).

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In the first step, through content analysis, we examined the sustainability reports, annual reports, corporate governance guidelines, and other available materials of the sampled firms, and we identified the variables able to define different CG approaches. Then, we cross-validated the identified governance features with ESG and corporate governance indicators provided by Refinitiv. Although Refinitiv does not offer the same level of qualitative detail as our manual analysis, the general alignment between the two sources reinforces the consistency and robustness of our variable construction.

All authors independently collected data, and each variable was constructed through a manual content analysis. The content analysis was done manually for several reasons. This procedure enabled authors to make comparisons, prevent inconsistencies, and ensure the reliability of the results (Krippendorff 2018). The information comes from various sources and is presented in different forms (e.g., text, figures such as organizational charts, tables); manual analysis is the best way to manage this heterogeneity. Furthermore, firms adopt various terminologies when it comes to sustainability. For example, concerning the adoption of a board committee, firms could have committees with multiple names, such as ESG committee, sustainability committee or CSR committee, which, however, had the same tasks and responsibilities. Manual content analysis allows for the recognition of such semantic variation and has been widely adopted in ESG research to extract qualitative features from disclosures (Michelon and Parbonetti 2012; Sharma et al. 2020). Finally, textual information requires insights that go beyond the number of words or sentences.

To ensure coding consistency, all authors independently applied the protocol after a pilot phase to align interpretations. Any discrepancies or ambiguous cases were discussed collectively until consensus was reached.

We constructed four variables, described in Table 2:

i. *External advisors*, representing external and exploration-oriented mechanisms grounded in resource dependency theory;

ii. *Independent directors*, also classified as external and exploratory, given their role in broadening strategic oversight and stakeholder representation;

iii. *Internal sustainability team*, composed of personnel directly employed by the firm, reflect internal and exploitation-based mechanisms aligned with stakeholder theory;

iv. *Board sustainability committee*, a formal internal governance structure rooted in the board of directors, also reflects an exploitation-oriented mechanism by institutionalizing ESG within existing governance processes and enhancing internal coordination.

External advisors and independent directors are widely recognized in both theory and practice as key external governance mechanisms that enable firms to access new knowledge, legitimacy, and strategic insights, reflecting an exploratory logic (Rodríguez-Sanz et al. 2024). Conversely, the internal sustainability team represents the formalization of sustainability competencies within the organizational structure (Cardon and Stevens 2004), while the board sustainability committee consists of established governance instruments that integrate environmental and social priorities into strategic decision-making (Hillman and Dalziel 2003). Both are rooted in an exploitation logic, fostering internal resource development and operational integration.

TABLE 2 | CG resources variable definitions.

CG resources	Variable definition	Resources
External advisors	Presence of external advisors	External resources, Exploration
Independent directors	Percentage of independent directors of the Committee	External resources, Exploration
Internal Sustainability Team	Dummy variable taking the value 1 if the firm nominates a Team composed of personnel of the firm but not only directors (e.g., employees and managers) that deals with environmental and social issues, 0 otherwise	Internal resources, Exploitation
Board Sustainability Committee	Dummy variable that takes the value 1 if the firm nominates a committee that deals with environmental and social issues, 0 otherwise.	Internal resources, Exploration and Exploitation

Abbreviation: CG = Corporate Governance.

Together, these four variables form a parsimonious yet robust framework that reflects both the formal architecture of CG resources and its functional role in sustainability governance. They are also observable and consistently reported in firm disclosures, ensuring reliability and comparability in empirical analysis. While CG encompasses a broader array of resources, these four were selected because they are widely adopted across firms, explicitly connected to sustainability governance in prior research, and interpretable within the dual lens of exploration and exploitation. As such, they provide a theoretically grounded and empirically tractable basis for clustering firms according to their CG approach to environmental and social performance.

As a result of the first step, we created a database containing details about each sample firm's CG resources.

In the second step, we conducted the cluster analysis. We performed a hierarchical agglomerative clustering using Ward's method on a dissimilarity matrix computed with the Jaccard coefficient, which is well suited for binary data (Gower and Legendre 1986). The choice of the Jaccard distance reflects the binary nature of most of the CG variables under analysis. This clustering technique is particularly appropriate for exploratory studies where the number of clusters is not known a priori, as it iteratively merges the most similar observations while minimizing within-cluster variance.

To determine the optimal number of clusters, we examined both the dendrogram and the corresponding scree plot of linkage

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distances. A sharp increase in linkage height was observed after the fourth merging step, indicating a natural cutoff point and supporting the selection of a four-cluster solution (Johnson and Wichern 2007). To assess the internal validity of the clustering solution, we calculated the average silhouette width, which yielded a value of 0.858, indicating a very strong degree of cohesion within clusters and separation between them (Rousseeuw 1987). This result supports the empirical robustness of the classification and complements its theoretical interpretability.

While a greater number of clusters could introduce more granularity, the four-cluster solution offers a theoretically grounded and empirically interpretable typology of CG approaches. It aligns with our conceptual framework, which differentiates governance configurations along two key dimensions: internal vs. external resource orientation and operational vs. strategic governance focus. This structure ensures a balance between explanatory depth and empirical tractability in the subsequent analysis.

5.3 | Second Stage: Model and Variables

We adopted the multiple regression model (Greene 2018) to examine the relationship between the CG approaches (i.e., the clusters) and the environmental and social performance. The models are as follows:

$$\text{Environmental performance} = f(\text{CG approach}, \text{Control variables}) \text{ (Model} \quad (1)$$

$$\text{Social performance} = f(\text{CG approach}, \text{Control variables}) \text{ (Model} \quad (2)$$

The dependent variables of the models are the firm's *Environmental performance* and *Social performance*. Assessing a firm's environmental and social performance represents a procedure that is not straightforward and unambiguous. Specific indicators and metrics can be adopted from the reporting standards adopted by firms (i.e., GRI, SASB, IR, EFRAG). At the same time, it is possible to rely on indicators issued by third parties to assess the KPIs adopted by firms and reported in sustainability reports, such as ESG ratings or specific ESG indices (Pan et al. 2021), or on questionnaires, interviews, and surveys to be administered to individual firms. In this study, the Environmental Pillar Score and the Social Pillar Score provided by Refinitiv have been used as proxies for the *environmental performance score* (*EPS*) and *social performance score* (*SPS*) variables, respectively (Gomes and Marsat 2018; Jackson et al. 2020). Each pillar score ranges from 0, indicating the lowest performance, to 100, representing the highest performance. In particular, the *environmental pillar* is a score assigned to each firm that reflects its overall performance in terms of environmental sustainability, resulting from the weighted composition of three environmental categories: *emissions score* (36%), *environmental innovation score* (29%), and *resource use score* (35%). Similarly, the *social pillar* results from the weighted composition of four social categories: *human rights score* (17%), *product responsibility score* (13%), *workforce score* (43%), and *community score* (28%). All the categories have been used as dependent variables in the models developed as a robustness check.

The independent variables to evaluate different CG approaches are obtained from the cluster analysis (i.e., *external CG approach*, *internal operational CG approach*, *internal strategic CG approach*, *internal and external strategic CG approach*).

We control for several firm-specific characteristics. Previous studies showed a significant positive relationship between the size of a firm and environmental and social performance (Galani et al. 2012). The greater resource availability of larger firms usually results in better environmental and social performance (Baraibar-Diez and Odriozola 2019). We measure firm size as the firm's turnover (*firm size*). Firm age is used as a proxy for organisational complexity and experience and has significant effects on a firm's environmental and social performance (Srivastava and Gnyawali 2011). We measure the *firm age* as the number of years since its founding (Pan et al. 2021). A firm's profitability is directly related to environmental and social performance, as profitability provides the capacity for management to give more attention to sustainability demands (Huang 2021). We measure *profitability* as net income to total assets, return on assets (*ROA*) (Weber 2017). Also, debt-to-equity ratio (*Indebtedness*) is included as a firm-specific characteristic. Indebtedness and, thus, less ability to invest in environmental and social issues result in worse performance. Finally, since CG approaches and environmental and social performance can be influenced by the culture and regulation of the context and by the sector in which the firm operates, we include a variable that determines the geographic location of the firm (*geographical region*) (Baraibar-Diez and Odriozola 2019) and a variable capturing the specific NACE 2-digit manufacturing sector of each firm (Velte and Stawinoga 2020).

Table 3 presents variables definitions and sources.

6 | Results

6.1 | Descriptive Statistics

Table 4 displays overall descriptive statistics. The average *EPS* and *SPS* of the sample are 64.19 and 71.12, respectively. Regarding the *EPS*, the worst performing firm scored less than 7, and the best performing firm achieved a score of more than 98. For the *SPS*, the worst firm scored less than 18, and the best performing firm scored more than 97. The sample primarily consists of large firms, with an average age of nearly 68 years.

6.2 | Cluster Analysis Results

The cluster analysis results, shown in Table 5, present a detailed and accurate picture of the different CG approaches to environmental and social performance.

Forty-three firms are classified in the *external CG approach* cluster. These firms did not adopt internal CG approaches. However, these firms have disclosed environmental and social information and relied on external figures that influence environmental and social performance through an operational approach.

Internal operational CG approach cluster includes firms with an internal team, which is an operational corporate function

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TABLE 3 | Variable definitions.

Variable	Definition	Source	Year
Dependent variables			
Environmental performance score (EPS)	The environment pillar score is the weighted average rating of a firm based on the reported environmental information and the resulting three environmental category scores: emissions score, environmental innovation score, and resource use score.	Refinitiv	2023
Emission score (ES)	The emissions score measures a firm's commitment and effectiveness in reducing environmental emissions in production and operational processes.	Refinitiv	2023
Environmental innovation score (EIS)	The environmental innovation score reflects a firm's capacity to reduce its customers' environmental costs and burdens and, therefore, create new market opportunities through new environmental technologies, processes, or eco-designed products.	Refinitiv	2023
Resource use score (RUS)	Resource use score reflects a firm's performance and capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management.	Refinitiv	2023
Social performance score (SPS)	The social pillar score is the weighted average rating of a firm based on the reported social information and the resulting four social category scores: product responsibility score, workforce score, human rights score, and community score.	Refinitiv	2023
Human rights score (HRS)	Human rights score measures a firm's effectiveness towards respecting the fundamental human rights conventions.	Refinitiv	2023
Product responsibility score (PRS)	Product responsibility score reflects a firm's capacity to produce quality goods and services that integrate the customer's health and safety, integrity, and data privacy.	Refinitiv	2023
Workforce score (WS)	Workforce score measures a firm's effectiveness towards job satisfaction, healthy and safe workplace, maintaining diversity and equal opportunities, and development opportunities for its workforce.	Refinitiv	2023
Community score (CS)	Community score measures the firm's commitment towards being a good citizen, protecting public health, and respecting business ethics.	Refinitiv	2023
Independent variables			
CG approach	Dummy variable for different cluster defining CG approaches to ESG: external CG approach, internal operational CG approach, internal strategic CG approach, and internal and external CG approach	Corporate disclosure and cluster analysis	2023
Control variables			
Firm size	Turnover	Refinitv	2023
Firm age	Number of years since firm foundation	Refinitv	2023
Profitability	Net income on total assets	Refinitv	2023
Indebtedness	Debt/equity ratio	Refinitv	2023
Sector	Dummy variables taking the value 1 if a firm operates in the sector, 0 otherwise, NACE code	Refinitiv	2023
Geographical region	Dummy variables taking the value 1 if a firm operates in the country, 0 otherwise	Refinitv	2023

Abbreviation: CG = Corporate Governance.

responsible for executing tangible initiatives about environmental and social aspects. This cluster is the most populated cluster, with 102 firms that do not have a committee. Thus, the environmental and social culture spreads from the middle level into the various business functions that the team addresses for operational aspects, instead of strategic or political ones. Internal resources influence environmental and social performance.

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TABLE 4 | Descriptive statistics.

Variable	Mean/%	SD	Min	Max
EPS	64.19	1.26	6.84	98.32
ES	70.92	1.40	2.28	99.80
EIS	48.25	1.90	0.00	99.90
RUS	72.02	1.35	0.46	99.87
SPS	71.12	1.00	17.67	97.51
HRS	69.34	1.35	0.00	95.31
PRS	70.78	1.48	6.55	99.71
WS	75.80	1.20	17.41	99.84
CS	69.36	1.42	4.17	99.84
CG approach			0	1
Firm size	11.18	23.36	0.12	211.63
Firm age	67.51	3.05	2.00	264.00
Profitability	0.24	0.01	0.00	1.07
Indebtedness	0.73	0.05	0.01	6.61

Abbreviations: CG, corporate governance; CS, community score; EIS, environmental initiative score; EPS, environmental performance score; ES, environmental score; HRS, human rights score; PRS, product responsibility score; RUS, resource use score; SPS, sustainable production score; WS, workforce score.

The last two clusters contain firms that have appointed a committee, a group of directors to implement environmental and social policies and strategies, and an internal team. *Internal strategic CG approach* cluster includes 38 firms that have appointed a committee without independent directors. The environmental and social culture is spread from the top and middle levels, and the approach is twofold: operational and strategic. Again, internal resources influence environmental and social performance.

In conclusion, the *internal and external strategic CG approach* cluster consists of 94 firms that have appointed a committee composed of dependent and independent directors and an internal team. The approach is twofold: operational and strategic. The environmental and social culture is all-encompassing and relies on many dedicated resources, both internal and external.

Summarizing, the distribution of clusters is characterized by variations in the origin of the resources (i.e., external vs. internal) and the governance orientation to environmental and social issues (i.e., operational or strategic) (Figure 2). This categorization can help understand how different CG approaches tackle challenges, manage resources, and then perform in terms of environmental and social aspects.

Table 6 presents the mean values of the environmental and social performance and category scores per CG approach. For the *EPS*, the *internal and external strategic CG approach* achieves the highest average score (68.18), followed by the *internal strategic CG approach* (65.90) and the *internal operational CG approach* (62.21). The *external CG approach* has the lowest score (58.25). In terms of *SPS*, the *internal strategic CG approach* also leads with an average score of 75.11, followed closely by the internal and external strategic CG approach (73.24). Again, the *external CG approach* shows the lowest score (64.50). The overall scores of the other categories are similarly higher for *internal strategic CG approach* and *Internal and external strategic CG approach*. Firms that rely exclusively on *external CG approaches* tend to lag in performance in most categories, while those that incorporate internal strategic elements perform consistently better.

To ensure the validity of the regression results, a Pearson correlation analysis was first conducted. This analysis confirmed no significant multicollinearity among the independent variables. VIF values indicated that multicollinearity is not a concern in the model.

6.3 | Multiple Regression Results

Two multiple regression models examined the relationship between the CG approaches and environmental (Model 1 [EPS]) and social (Model 2 [SPS]) performance. The *external CG approach* was used as a reference.

To address potential endogeneity, we implement a control function approach (CFA). In the first stage, we regress cluster assignment on a set of firm-level exogenous characteristics. We then include the residuals from this first-stage regression in the main models. In both EPS and SPS regressions, these residuals are not statistically significant, suggesting no evidence of endogeneity.

Table 7 shows the results of the empirical analysis.

In Model 1 (EPS), *internal operational CG approach*, *internal strategic CG approach*, and *internal and external strategic CG approach* have a positive impact, although only the latter is statistically significant. *Internal and external strategic CG approach* also has the largest effect ($b = 11.3137$, $p < 0.01$).

In Model 2 (SPS), all *internal operational CG approaches, internal strategic CG approaches*, and *internal and external strategic CG approaches* have a positive and statistically significant impact. *Internal strategic CG approach* has the largest effect ($b = 11.8758$, $p < 0.01$), followed by *internal and external strategic CG approach* ($b = 10.2192$, $p < 0.1$) and *internal operational CG approach* ($b = 6.3110$, $p < 0.05$).

Only *firm size* positively and significantly affects *EPS* and *SPS among the control variables*.

6.4 | Robustness Check

We replicate the multiple linear regression model for the environmental and social categories as a robustness check.

Three multiple regression models examined the relationship between the CG approaches and different environmental categories (Table 8). In Model 3 (ES), all the coefficients of the CG approaches are positive but not statistically significant. In Model 4 (EIS), the *internal and external strategic CG approach* is the only variable

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TABLE 5 | Cluster analysis.

CG approach	Number of firms	External advisors	Independent directors	Internal sustainability team	Board sustainability committee	Description
External operational CG approach	39	Yes	No	No	No	The firm does not show any environmental and social dedicated structure. It engages external advisors. The approach is operational. External resources influence environmental and social performance through an operational approach.
Internal operational CG approach	100	No	No	Yes	No	The firm has an internal team. It is an operational corporate function responsible for executing tangible initiatives about environmental and social issues. The environmental and social culture is spread from the middle level. Internal resources influence environmental and social performance.
Internal strategic CG approach	39	No	No	Yes	Yes	The firm has an internal committee composed of dependent directors and a team. The approach is twofold: operational and strategic. Environmental and social culture follows a two-pronged approach: a holistic perspective and a top-down methodology. Internal resources influence environmental and social performance.
Internal and external strategic CG approach	91	Yes/no	Yes	Yes/no	Yes	The firm has a committee composed of dependent and independent directors and a team. The approach is twofold: operational and strategic. The environmental and social culture is all-encompassing and relies on many dedicated resources, both internal and external.

Abbreviation: CG, corporate governance.

with a positive and statistically significant impact ($b = 15.5665$, $p < 0.05$). In Model 5 (RUS), all three CG approaches—*internal and external strategic CG approach*, *internal strategic CG approach*, and *internal operational CG approach*—show positive and statistically significant coefficients. The *internal and external strategic CG approach* has the largest effect ($b = 12.7276$, $p < 0.01$), followed by the *internal strategic CG approach* ($b = 9.7077$, $p < 0.1$) and the *internal operational CG approach* ($b = 8.3350$, $p < 0.1$). Among control variables and across all models, *firm size* consistently shows a positive and significant influence on all environmental categories. Other control variables do not exhibit statistically significant effects in any of the models.

Four multiple regression models examined the relationship between the CG approaches and different social performance categories (Table 9). In Model 6 (HRS), all CG approaches have positive coefficients. However, only the *internal and external strategic CG approach* ($b = 8.6036$, $p < 0.1$) and the *internal strategic CG approach* ($b = 10.3354$, $p < 0.1$) are statistically significant. In Model 7 (PRS), both the *internal and external strategic CG approach* ($b = 12.4917$, $p < 0.05$), the *internal strategic CG approach* ($b = 15.8959$, $p < 0.05$) and the *internal operational CG approach* ($b = 12.2567$, $p < 0.05$) exhibit positive and statistically significant effects. In Model 8 (WS), all CG approaches positively impact *workforce score*, with the *internal and external strategic CG approach* ($b = 11.4944$, $p < 0.01$) and the *internal strategic CG approach* ($b = 9.2905$, $p < 0.05$) being statistically significant. In Model 8 (WS), both the *internal and external strategic CG approach* ($b = 8.0735$, $p < 0.1$) and the *internal strategic CG approach* ($b = 11.1045$, $p < 0.05$) have significant and positive coefficients. Again, across all models and among control variables, only *firm size* consistently shows a positive and

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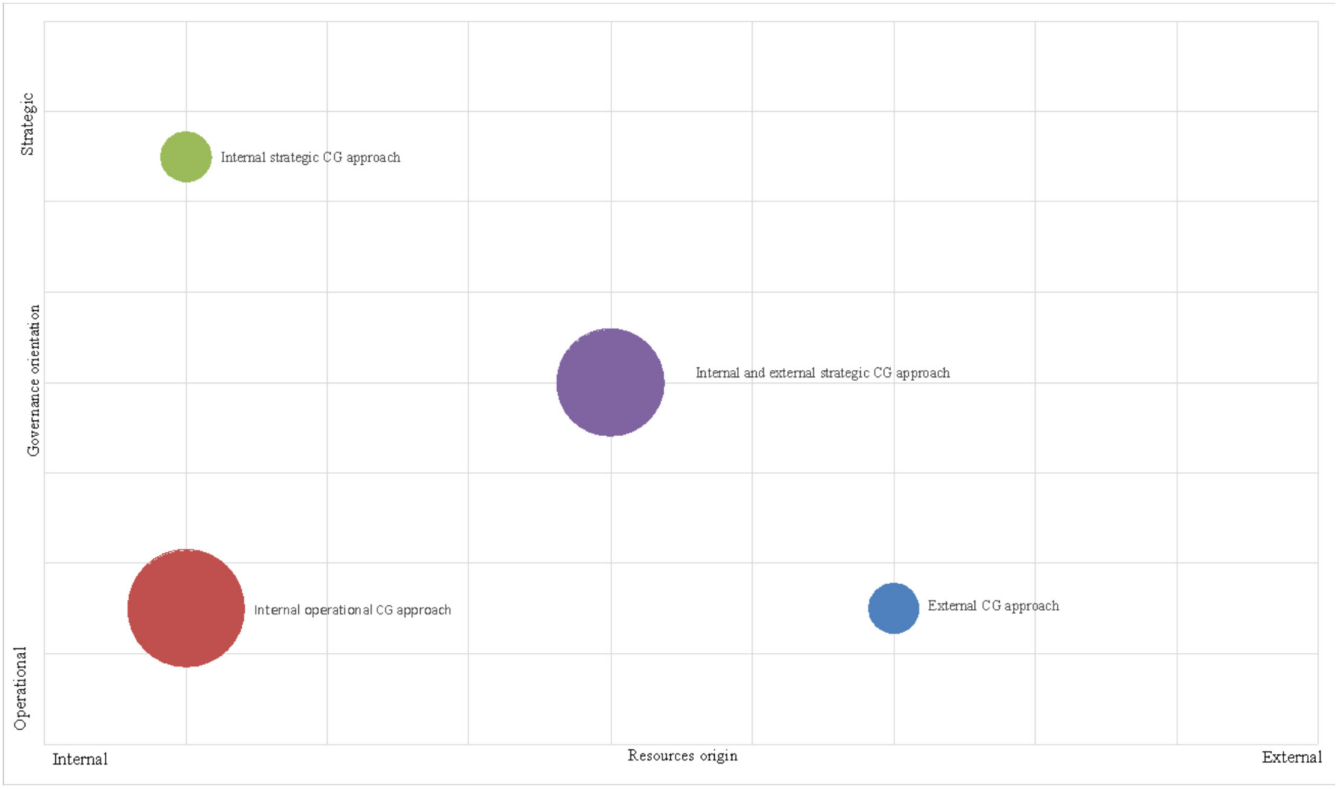

FIGURE 2 | Mapping CG approach clusters.

TABLE 6 | Environmental and social performance and categories averages by CG approach.

CG approach	EPS	ES	EIS	RUS	SPS	HRS	PRS	WS	CS
External CG approach	**58.25**	67.72	40.51	63.78	**64.50**	62.69	61.47	69.25	65.70
Internal operational CG approach	**62.21**	66.94	46.91	71.51	**70.21**	70.85	71.81	71.42	67.24
Internal strategic CG approach	**65.90**	73.16	49.61	74.08	**75.11**	73.45	75.05	78.23	72.35
Internal and external strategic CG approach	**68.18**	75.72	52.45	75.24	**73.24**	68.77	71.80	82.39	71.97
Total	**64.19**	70.92	48.25	72.02	**71.12**	69.34	70.78	75.80	69.36

Abbreviations: CG, corporate governance; CS, community score; EIS, environmental initiative score; EPS, environmental performance score; ES, environmental score; HRS, human rights score; PRS, product responsibility score; RUS, resource use score; SPS, sustainable production score; WS, workforce score.

statistically significant influence on social performance categories. Other control variables do not exhibit statistically significant effects in any of the models.

7 | Discussion

The empirical analysis helps understand how various CG approaches, distinguished by their emphasis on resource exploration and/or resource exploitation, internal and/or external resources origin and operational or strategic orientation, impact a firm's environmental and social performance. The results demonstrate how a structured and comprehensive CG approach, exemplified by the *internal and external strategic CG approach* and *Internal strategic CG approach* clusters, positively impacts environmental and social performance. This suggests that, in line with stakeholder theory, prioritizing environmental and social considerations within governance structures and integrating them into strategic decision-making processes leads to improved environmental and social performance (Biswas et al. 2018; Ludwig and Sassen 2022). This is consistent with the perspective of resource dependency theory, which posits that firms strategically design governance structures to access and manage critical resources (Salancik and Pfeffer 1978). The transition from externally sourced to internally embedded sustainability capabilities reflects a shift in how firms manage resource dependencies—initially leveraging external expertise to gain legitimacy and guidance and developing autonomous internal capacities to ensure long-term sustainability integration. These insights can offer valuable guidance for firms aiming to enhance their sustainability efforts through effective CG mechanisms (Michelon and Parbonetti 2012).

The use of resources devoted to developing internal capabilities is increasing as firms gain experience and expertise in environmental and social issues, which also affects the role of external advisors. By appointing a committee or a person to oversee

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TABLE 7 | Regression results.

Predictors	Model 1 (EPS) Estimates	Model 2 (SPS) Estimates
(Intercept)	22.3440 (20.6325)	39.5449** (15.9312)
Internal and external strategic CG approach	11.3137*** (4.2363)	10.2192*** (3.2710)
Internal operational CG approach	4.2640 (4.0353)	6.3110** (3.1158)
Internal strategic CG approach	7.0874 (4.8383)	11.8758*** (3.7358)
Firm size	0.1626*** (0.0606)	0.1627*** (0.0468)
Firm age	0.0153 (0.0274)	0.0324 (0.0212)
Profitability	−1.8906 (18.3597)	−11.0807 (14.1763)
Indebtedness	−1.7815 (1.8311)	0.9382 (1.4139)
Sector	Yes	Yes
Geographical region	Yes	Yes
Observations	269	269
R^2/R^2 adjusted	0.382/0.204	0.412/0.243

Note: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.
Abbreviations: CG, corporate governance; EPS, environmental performance score; SPS, sustainable production score.

TABLE 8 | Environmental performance robustness check results.

Predictors	Model 3 (ES) *Estimates*	Model 4 (EIS) *Estimates*	Model 5 (RUS) *Estimates*
(Intercept)	6.6208 (22.8648)	16.1208 (32.7741)	30.4179 (22.6350)
Internal and external strategic CG approach	6.1580 (4.6946)	15.5665** (6.7292)	12.7276*** (4.6474)
Internal operational CG approach	1.9391 (4.4719)	−0.1822 (6.4099)	8.3350* (4.4269)
Internal strategic CG approach	4.3432 (5.3618)	5.6499 (7.6855)	9.7077* (5.3079)
Firm size	0.2029*** (0.0671)	0.1595* (0.0962)	0.1710** (0.0664)
Firm age	0.0098 (0.0304)	−0.0060 (0.0435)	0.0350 (0.0301)
Profitability	−11.8855 (20.3461)	−15.7459 (29.1638)	8.7317 (20.1416)
Indebtedness	−0.7364 (2.0292)	−2.9301 (2.9086)	1.6514 (2.0088)
Sector			
Geographical region			
Observations	269	269	269
R^2/R^2 adjusted	0.387/0.210	0.315/0.117	0.355/0.169

Note: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.
Abbreviations: CG, corporate governance; EIS, environmental initiative score; ES, environmental score; RUS, resource use score.

sustainability issues at the board level, firms could implement the strategy of leveraging internal resources. Investing in integrating environmental and social considerations into CG and allocating internal and external dedicated resources to manage these issues can significantly improve overall sustainability.

Furthermore, the analysis has highlighted how the transition from a resource exploration approach, characterised by external assistance and reliance on advisors, to a resource exploitation approach, with greater involvement of internal resources dedicated to sustainability, is associated with improvements in environmental and social performance. Indeed, the results show that firms with the *external CG approach* have a lower environmental and social performance than firms with even only a dedicated team, as explained by the *internal operational CG approach*. This suggests that as firms mature and gain experience in environmental and social issues, internalization of functions and building internal capabilities becomes crucial to maintain and enhance sustainability performance. The more firms internalize functions and processes related to sustainability within their organizational structure, the more they benefit in terms of environmental and social performance. Managing the transition from external to internal resource orientation in CG requires a strategic and phased approach. In the early stages of sustainability engagement, firms often depend on external advisors and independent directors to access expertise, benchmark best practices, and build legitimacy. These external resources play a critical role in helping firms interpret regulatory frameworks, engage with stakeholders, and frame their initial environmental and social initiatives (Hillman et al. 2009; Orazalin and Baydauletov 2020). However, as firms gain experience, they are increasingly able to develop in-house capabilities and routines (Zollo and Winter 2002). This transition involves institutionalizing sustainability by investing in internal competencies, such as appointing dedicated teams, embedding ESG responsibilities into managerial roles, and establishing board-level sustainability committees. These internal mechanisms foster deeper environmental and social objectives integration into strategic decision-making and day-to-day operations (Pucheta-Martínez and Gallego-Álvarez 2019). While external inputs may remain valuable for strategic renewal and independent oversight, long-term performance depends on a firm's ability to embed sustainability into its organization. In this sense, the balance between exploration and exploitation becomes a theoretical construct and a practical pathway for effective governance in the pursuit of sustainability.

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TABLE 9 | Social performance robustness check results.

	Model 6 (HRS)	Model 7 (PRS)	Model 8 (WS)	Model 9 (CS)
Predictors	***Estimates***	***Estimates***	***Estimates***	***Estimates***
(Intercept)	23.2106 (22.4352)	29.0128 (26.7881)	66.2046*** (19.0180)	48.6142** (24.0175)
Internal and external strategic CG approach	8.6036* (4.6064)	12.4917** (5.5001)	11.4944*** (3.9048)	8.0735 (4.9313)
Internal operational CG approach	6.7132 (4.3879)	12.2567** (5.2392)	3.7435 (3.7195)	3.0244 (4.6973)
Internal strategic CG approach	10.3354* (5.2610)	15.8959** (6.2818)	9.2905** (4.4597)	11.1045** (5.6321)
Firm size	0.1570** (0.0659)	0.0539 (0.0786)	0.2069*** (0.0558)	0.2463*** (0.0705)
Firm age	0.0520* (0.0298)	0.0101 (0.0356)	0.0459* (0.0253)	0.0222 (0.0319)
Profitability	−18.3434 (19.9638)	4.5916 (23.8372)	−13.7467 (16.9230)	−8.1893 (21.3718)
Indebtedness	0.6336 (1.9911)	0.8150 (2.3774)	1.4260 (1.6878)	0.2151 (2.1315)
Sector				
Geographical region				
Observations	269	269	269	269
R^2/R^2 adjusted	0.369/0.187	0.251/0.035	0.418/0.250	0.341/0.151

Note: $^*p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$.
Abbreviations: CG, corporate governance; CS, community score; HRS, human rights score; PRS, product responsibility score; WS, workforce score.

8 | Implications

8.1 | Theoretical Implications

This study contributes to the theoretical advancement of sustainable CG in several ways.

First, it introduces a resource-oriented typology of CG that unifies stakeholder theory, resource dependency theory, and the exploration–exploitation logic into a single integrative framework. Prior research has typically applied these theories in parallel, not jointly theorized to explain the dynamic governance processes through which firms balance internal capability building and external boundary-spanning. We extend prior work by conceptualizing CG as a system of resource orchestration across two axes, internal versus external and operational versus strategic, thus reframing governance as an adaptive complex learning mechanism rather than a static structural attribute.

Second, our integration refines the explanatory scope of both theories by introducing the exploration–exploitation mechanism as a linking process between them. Through this lens, stakeholder theory explains the normative rationale for engaging multiple interests, while resource dependency theory explains the structural mechanisms of access and control. The exploration–exploitation logic connects the two by describing how governance configurations shift from exploration (external legitimacy and knowledge acquisition) to exploitation (internal integration and capability development). This dynamic interaction clarifies the microfoundations of sustainable governance.

Third, we provide conceptual and empirical evidence that these theoretical complementarities yield distinct and measurable CG approaches. Our results demonstrate that strategic configurations, particularly those combining internal and external resources, generate superior environmental and social performance. This finding extends the boundary conditions of both stakeholder and resource dependency theory, suggesting that sustainability outcomes depend not only on stakeholder engagement or resource access per se, but on the balance between exploration and exploitation embedded in a firm's CG approach.

8.2 | Practical Implications

From a managerial standpoint, the results highlight that sustainability governance should function as an integrated process rather than a set of isolated structures. Managers and boards should encourage continuous collaboration between internal sustainability teams and board-level committees to align strategic oversight with operational execution. Strengthening internal sustainability capabilities allows firms to internalize the benefits of external expertise and sustain improvements in both environmental and social performance.

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At the policy level, policymakers and regulators should consider supporting firms in adopting CG approaches that combine both internal resources and external expertise. For example, regulatory frameworks could incentivize firms to establish dedicated sustainability committees with both board and management participation, or to engage certified external advisors in sustainability decision-making. In addition, reporting guidelines could be updated to capture not only board composition but also the strategic orientation and operational responsibility for sustainability topics, allowing stakeholders to better evaluate a firm's governance model regarding its sustainability performance.

8.3 | Limitations and Future Research

This study has several limitations that open avenues for future research.

The size and composition of the sample may influence the results. Additionally, it is important to consider temporal limitations. The collected information may reflect a specific moment in time, and business and market conditions can change over time. Moreover, unobserved heterogeneity among firms, such as internal values, informal practices, or leadership priorities, might also shape both the adoption of CG approaches and environmental/social performance, introducing biases not fully captured in our model. In addition, the study is based on cross-sectional data for a single year, which limits the ability to observe how governance mechanisms evolve over time and how their impact on sustainability performance may change.

This limitation reflects current data availability constraints, particularly regarding detailed CG practices that are not consistently disclosed in earlier years. Nonetheless, this issue highlights an important avenue for future research. Future studies could incorporate panel structures, qualitative data, or advanced econometric techniques (e.g., fixed effects or instrumental variable methods) to enhance causal inference and capture time-varying effects.

Looking forward, our research paves the way for further exploration into how resource allocation strategies and the changing environmental and social landscape interact. The capacity of CG to adapt, integrating sustainability as a strategic focus through both exploration and exploitation of resources, will be crucial in advancing corporate responsibility and sustainability performance.

9 | Conclusion

The study reinforces the significance of a CG approach tailored to enhance environmental and social performance, recognizing the growing consensus that embedding environmental and social performance into core business strategies is not merely ethical but crucial for long-term success. By distinguishing CG approaches according to the origin of resources and their operational or strategic orientation, the analysis demonstrates that a nuanced CG approach, through internalizing environmental and social functions such as internal sustainability teams and board sustainability committees, and incorporating external resources like advisors and independent directors, yields the most consistent improvements in environmental and social performance.

Beyond empirical evidence, the study advances the understanding of CG as an adaptive and learning-oriented system, capable of aligning organizational structures with evolving stakeholder and institutional expectations. The findings suggest that environmental and social performance is not the result of isolated governance mechanisms, but rather of their coherent interaction within broader strategic processes. The results provide a robust foundation for future longitudinal analyses exploring how governance configurations evolve over time and how different institutional settings mediate their effects. In this sense, the study contributes to consolidating the link between governance design, resource orchestration, and sustainable value creation.

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Endnotes

[1] The different measurement possibilities could yield different results based on the sector, the country, and the firm‘s specific objectives. The lack of a standardized approach for measuring environmental and social performance makes comparative evaluation between very different firms difficult.

[2] The measures include the efficiency of processes and the reduction of raw material and energy consumption; talent attraction and retention; customer loyalty; reputation, but few correlate the different styles of CG approaches.

[3] Firms with missing data or for which it was not possible to obtain a sustainability report were excluded from the analysis.

[4] The GRI Standards serve as a universally recognized guideline for effectively reporting economic, environmental, and social aspects.

References

Abdullah, H., and B. Valentine. 2009. “Fundamental and Ethics Theories of Corporate Governance.” *Middle Eastern Finance and Economics* 4, no. 4: 88–96.

Awan, U., I. Gölgeci, D. Makhmadshoev, and N. Mishra. 2022. “Industry 4.0 and Circular Economy in an Era of Global Value Chains: What Have We Learned and What Is Still to Be Explored?” *Journal of Cleaner Production* 371: 133621.

Awan, U., A. Kraslawski, and J. Huiskonen. 2017. “Understanding the Relationship Between Stakeholder Pressure and Sustainability Performance in Manufacturing Firms in Pakistan.” *Procedia Manufacturing* 11: 768–777.

Baraibar-Diez, E., and D. M. Odriozola. 2019. “CSR Committees and Their Effect on ESG Performance in UK, France, Germany, and Spain.” *Sustainability* 11, no. 18: 5077.

Biswas, P. K., M. Mansi, and R. Pandey. 2018. “Board Composition, Sustainability Committee and Corporate Social and Environmental Performance in Australia.” *Pacific Accounting Review* 30, no. 4: 517–540.

Brennan, N. M., and J. Solomon. 2008. “Corporate Governance, Accountability and Mechanisms of Accountability: An Overview.” *Accounting, Auditing & Accountability Journal* 21, no. 7: 885–906. https://doi.org/10.1108/09513570810907401.

Burke, J. J., R. Hoitash, and U. Hoitash. 2019. “The Heterogeneity of Board-Level Sustainability Committees and Corporate Social Performance.” *Journal of Business Ethics* 154: 1161–1186.

10990836, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/bse.70431 by CochraneItalia, Wiley Online Library on [01/12/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Cadman, T. 2011. *Quality and Legitimacy of Global Governance: Case Lessons From Forestry*. Springer.

Camilleri, M. A., C. Troise, S. Strazzullo, and S. Bresciani. 2023. "Creating Shared Value Through Open Innovation Approaches: Opportunities and Challenges for Corporate Sustainability." *Business Strategy and the Environment* 32: 4485–4502. https://doi.org/10.1002/bse.3377.

Cankar, N. 2005. "Transition Economies and Corporate Governance Codes: Can Self-Regulation of Corporate Governance Really Work?" *Journal of Corporate Law Studies* 5, no. 2: 285–304.

Cardon, M. S., and C. E. Stevens. 2004. "Managing Human Resources in Small Organizations: What Do We Know?" *Human Resource Management Review* 14, no. 3: 295–323.

Cherrington, R., E. A. Llano, R. Dimov, and A. Bhattacharya. 2023. "A Perspective on Circular Innovation: Dynamics, Strategies, and Implications." *Journal of Innovation Management* 11, no. 4: 1–16.

Claessens, S., and B. B. Yurtoglu. 2013. "Corporate Governance in Emerging Markets: A Survey." *Emerging Markets Review* 15: 1–33.

Clément, A., É. Robinot, and L. Trespeuch. 2023. "The Use of ESG Scores in Academic Literature: A Systematic Literature Review." *Journal of Enterprising Communities: People and Places in the Global Economy* 19: 92–110. https://doi.org/10.1108/JEC-10-2022-0147.

Cong, Y., and M. Freedman. 2011. "Corporate Governance and Environmental Performance and Disclosures." *Advances in Accounting* 27, no. 2: 223–232.

Cutting, B., and A. Kouzmin. 2000. "The Emerging Patterns of Power in Corporate Governance–Back to the Future in Improving Corporate Decision Making." *Journal of Managerial Psychology* 15, no. 5: 477–507.

Dasanayaka, C. H., N. Gunarathne, D. F. Murphy, and P. Nagirikandalage. 2022. "Triggers for and Barriers to the Adoption of Environmental Management Practices by Small and Medium-Sized Enterprises: A Critical Review." *Corporate Social Responsibility and Environmental Management* 29, no. 4: 749–764.

Dmytriyev, S. D., R. E. Freeman, and J. Hörisch. 2021. "The Relationship Between Stakeholder Theory and Corporate Social Responsibility: Differences, Similarities, and Implications for Social Issues in Management." *Journal of Management Studies* 58, no. 6: 1441–1470.

Du Plessis, J. J., A. Hargovan, and J. Harris. 2018. *Principles of Contemporary Corporate Governance*. Cambridge University Press.

Eliwa, Y., A. Aboud, and A. Saleh. 2021. "ESG Practices and the Cost of Debt: Evidence From EU Countries." *Critical Perspectives on Accounting* 79: 102097.

Ellili, N. O. D. 2022a. "Bibliometric Analysis on Corporate Governance Topics Published in the Journal of Corporate Governance: The International Journal of Business in Society." *Corporate Governance: The International Journal of Business in Society* 23, no. 1: 262–286.

Ellili, N. O. D. 2022b. "Impact of Environmental, Social and Governance Disclosure on Dividend Policy: What Is the Role of Corporate Governance? Evidence From an Emerging Market." *Corporate Social Responsibility and Environmental Management* 29, no. 5: 1396–1413.

Eurostat 2024. Greenhouse Gas Emission Accounts - Statistics Explained. https://ec.europa.eu/eurostat/statistics-explained/index.php/Greenhouse_gas_emission_accounts.

Fatemi, A., M. Glaum, and S. Kaiser. 2018. "ESG Performance and Firm Value: The Moderating Role of Disclosure." *Global Finance Journal* 38: 45–64.

Freeman, R. E. 2023. "Managing for Stakeholders: Trade-Offs or Value Creation." In *R. Edward Freeman's Selected Works on Stakeholder Theory and Business Ethics*, 295–299. Springer.

Freeman, R. E., and S. Dmytriyev. 2017. "Corporate Social Responsibility and Stakeholder Theory: Learning From Each Other." *Symphonya. Emerging Issues in Management* no. 1: 7–15.

Freeman, R. E., R. Phillips, and R. Sisodia. 2020. "Tensions in Stakeholder Theory." *Business & Society* 59, no. 2: 213–231.

Freudenreich, B., F. Lüdeke-Freund, and S. Schaltegger. 2020. "A Stakeholder Theory Perspective on Business Models: Value Creation for Sustainability." *Journal of Business Ethics* 166: 3–18.

Galani, D., E. Gravas, and A. Stavropoulos. 2012. "Company Characteristics and Environmental Policy." *Business Strategy and the Environment* 21, no. 4: 236–247.

Galletta, S., J. W. Goodell, S. Mazzù, and A. Paltrinieri. 2023. "Bank Reputation and Operational Risk: The Impact of ESG." *Finance Research Letters* 51: 103494.

García Martín, C. J., and B. Herrero. 2020. "Do Board Characteristics Affect Environmental Performance? A Study of EU Firms." *Corporate Social Responsibility and Environmental Management* 27, no. 1: 74–94.

Giannarakis, G., A. Andronikidis, and N. Sariannidis. 2020. "Determinants of Environmental Disclosure: Investigating New and Conventional Corporate Governance Characteristics." *Annals of Operations Research* 294, no. 1: 87–105.

Giannarakis, G., I. Mallidis, N. Sariannidis, and G. Konteos. 2023. "The Impact of Corporate Governance Attributes on Environmental and Social Performance: The Case of European Region Excluding Companies From the Eurozone." *Business Strategy and the Environment* 32, no. 6: 3489–3512.

Gilson, R. J. 2001. "Globalizing Corporate Governance: Convergence of Form or Function." *American Journal of Comparative Law* 49, no. 2: 329–358.

Godos-Díez, J. L., L. Cabeza-García, and C. Fernández-González. 2018. "Relationship Between Corporate Social Responsibility (CSR) and Internationalisation Strategies: A Descriptive Study in the Spanish Context." *Administrative Sciences* 8, no. 4: 57.

Gomes, M., and S. Marsat. 2018. "Does CSR Impact Premiums in M&A Transactions?" *Finance Research Letters* 26: 71–80.

Gower, J. C., and P. Legendre. 1986. "Metric and Euclidean Properties of Dissimilarity Coefficients." *Journal of Classification* 3: 5–48.

Greene, W. 2018. *Econometric Analysis*. 8th ed. Pearson Education Limited.

Haniffa, R. M., and T. E. Cooke. 2005. "The Impact of Culture and Governance on Corporate Social Reporting." *Journal of Accounting and Public Policy* 24, no. 5: 391–430.

Hermalin, B., and M. S. Weisbach. 2007. "No Title. Transparency and Corporate Governance." In *Enterprise law*, 342–348. Edward Elgar Publishing.

Hillman, A. J., and T. Dalziel. 2003. "Boards of Directors and Firm Performance: Integrating Agency and Resource Dependence Perspectives." *Academy of Management Review* 28, no. 3: 383–396.

Hillman, A. J., M. C. Withers, and B. J. Collins. 2009. "Resource Dependence Theory: A Review." *Journal of Management* 35, no. 6: 1404–1427.

Huang, D. Z. 2021. "Environmental, Social and Governance (ESG) Activity and Firm Performance: A Review and Consolidation." *Accounting and Finance* 61, no. 1: 335–360.

Hughes, A., M. A. Urban, and D. Wójcik. 2021. "Alternative ESG Ratings: How Technological Innovation Is Reshaping Sustainable Investment." *Sustainability* 13, no. 6: 3551.

Huse, M. 2003. "Renewing Management and Governance: New Paradigms of Governance?" *Journal of Management and Governance* 7: 211–221.

Hussain, N., U. Rigoni, and R. P. Orij. 2018. "Corporate Governance and Sustainability Performance: Analysis of Triple Bottom Line Performance." *Journal of Business Ethics* 149, no. 2: 411–432.

10990836, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/bse.70431 by CochraneItalia, Wiley Online Library on [01/12/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Iatridis, G. E. 2012. "Audit Quality in Common-Law and Code-Law Emerging Markets: Evidence on Earnings Conservatism, Agency Costs and Cost of Equity." *Emerging Markets Review* 13, no. 2: 101–117.

Islam, R., E. French, and M. Ali. 2022. "Evaluating Board Diversity and Its Importance in the Environmental and Social Performance of Organizations." *Corporate Social Responsibility and Environmental Management* 29, no. 5: 1134–1145.

Jackson, G., J. Bartosch, E. Avetisyan, D. Kinderman, and J. S. Knudsen. 2020. "Mandatory non-financial Disclosure and Its Influence on CSR: An International Comparison." *Journal of Business Ethics* 162: 323–342.

Jacoby, G., M. Liu, Y. Wang, Z. Wu, and Y. Zhang. 2019. "Corporate Governance, External Control, and Environmental Information Transparency: Evidence From Emerging Markets." *Journal of International Financial Markets Institutions and Money* 58: 269–283.

Jiang, H., Y. Luo, J. Xia, M. Hitt, and J. Shen. 2023. "Resource Dependence Theory in International Business: Progress and Prospects." *Global Strategy Journal* 13, no. 1: 3–57.

Johnson, R. A., and D. W. Wichern. 2007. *Applied Multivariate Statistical Analysis*. 6th ed. Pearson Prentice Hall.

Karwowski, M., and M. Raulinajtys-Grzybek. 2021. "The Application of Corporate Social Responsibility (CSR) Actions for Mitigation of Environmental, Social, Corporate Governance (ESG) and Reputational Risk in Integrated Reports." *Corporate Social Responsibility and Environmental Management* 28, no. 4: 1270–1284.

Khan, M. 2019. "Corporate Governance, ESG, and Stock Returns Around the World." *Financial Analysts Journal* 75, no. 4: 103–123.

Krippendorff, K. 2018. *Content Analysis: An Introduction to Its Methodology*. Sage Publications.

Kujala, J., S. Sachs, H. Leinonen, A. Heikkinen, and D. Laude. 2022. "Stakeholder engagement: Past, present, and future." *Business & Society* 61, no. 5: 1136–1196.

Kumar, S. 2023. "A Review ESG Performance as a Measure of Stakeholders Theory." *Academy of Marketing Studies Journal* 27, no. S3: 1–18.

Lavie, D., U. Stettner, and M. L. Tushman. 2010. "Exploration and Exploitation Within and Across Organizations." *Academy of Management Annals* 4, no. 1: 109–155.

Lichtenthaler, U. 2023. "Sustainability Skills and Sustainable Natives: Key Competencies and Maturity Model for Sustainability Management." *Journal of Innovation Management* 11, no. 3: 95–113.

Ludwig, P., and R. Sassen. 2022. "Which Internal Corporate Governance Mechanisms Drive Corporate Sustainability?" *Journal of Environmental Management* 301: 113780.

March, J. G. 1991. "Exploration and Exploitation in Organizational Learning." *Organization Science* 2, no. 1: 71–87.

McGahan, A. M. 2021. "Integrating Insights From the Resource-Based View of the Firm Into the new Stakeholder Theory." *Journal of Management* 47, no. 7: 1734–1756.

Michelon, G., and A. Parbonetti. 2012. "The Effect of Corporate Governance on Sustainability Disclosure." *Journal of Management and Governance* 16, no. 3: 477–509.

Missimer, M., and P. L. Mesquita. 2022. "Social Sustainability in Business Organizations: A Research Agenda." *Sustainability* 14, no. 5: 2608.

Naciti, V., F. Cesaroni, and L. Pulejo. 2021. "Corporate Governance and Sustainability: A Review of the Existing Literature." *Journal of Management and Governance* 1: 1–20.

Nampoothiri, M. V., O. Entrop, and T. R. Annamalai. 2024. "Effect of Mandatory Sustainability Performance Disclosures on Firm Value: Evidence From Listed European Firms." *Corporate Social Responsibility and Environmental Management* 31: 5220–5235.

Ng, A. 2021. "Green Investing and Financial Services: ESG Investing for a Sustainable World." In *The Palgrave Handbook of Global Sustainability*, 1–12. Springer.

Nguyen, B., L. Cranney, B. Bellew, and M. Thomas. 2021. "Implementing Food Environment Policies at Scale: What Helps? What Hinders? A Systematic Review of Barriers and Enablers." *International Journal of Environmental Research and Public Health* 18, no. 19: 10346.

Niesten, E., A. Jolink, and E. Bacha. 2024. "Sustainable Development in Turbulent Environments: The Impact of ESG Capabilities on Responses to Turbulence." *Business Strategy and the Environment* 33, no. 7: 6468–6490.

Nobanee, H., F. Y. Al Hamadi, F. A. Abdulaziz, et al. 2021. "A Bibliometric Analysis of Sustainability and Risk Management." *Sustainability* 13, no. 6: 3277.

Oliveira, F., N. Kakabadse, and N. Khan. 2022. "Board Engagement With Digital Technologies: A Resource Dependence Framework." *Journal of Business Research* 139: 804–818.

Orazalin, N. 2020. "Do Board Sustainability Committees Contribute to Corporate Environmental and Social Performance? The Mediating Role of Corporate Social Responsibility Strategy." *Business Strategy and the Environment* 29, no. 1: 140–153.

Orazalin, N., and M. Baydauletov. 2020. "Corporate Social Responsibility Strategy and Corporate Environmental and Social Performance: The Moderating Role of Board Gender Diversity." *Corporate Social Responsibility and Environmental Management* 27, no. 4: 1664–1676.

Orazalin, N., and M. Mahmood. 2021. "Toward Sustainable Development: Board Characteristics, Country Governance Quality, and Environmental Performance." *Business Strategy and the Environment* 30, no. 8: 3569–3588.

Orts, E. W., and A. Strudler. 2002. "The Ethical and Environmental Limits of Stakeholder Theory." *Business Ethics Quarterly* 12: 215–233.

Ozturk, O. 2021. "Bibliometric Review of Resource Dependence Theory Literature: An Overview." *Management Review Quarterly* 71, no. 3: 525–552.

Pan, X., P. Sinha, and X. Chen. 2021. "Corporate Social Responsibility and eco-Innovation: The Triple Bottom Line Perspective." *Corporate Social Responsibility and Environmental Management* 28, no. 1: 214–228.

Papa, M., M. Carrassi, A. L. Muserra, and M. Wieczorek-Kosmala. 2022. "The Impact of the EU Nonfinancial Information Directive on Environmental Disclosure: Evidence From Italian Environmentally Sensitive Industries." *Meditari Accountancy Research* 30: 87–120.

Parmar, B. L., R. E. Freeman, J. S. Harrison, A. C. Wicks, L. Purnell, and S. de Colle. 2010. "Stakeholder Theory: The State of the Art." *Academy of Management Annals* 4, no. 1: 403–445. https://doi.org/10.5465/19416520.2010.495581.

Patelli, L., and A. Prencipe. 2007. "The Relationship Between Voluntary Disclosure and Independent Directors in the Presence of a Dominant Shareholder." *European Accounting Review* 16, no. 1: 5–33.

Peng, L. S., and M. Isa. 2020. "Environmental, Social and Governance (ESG) Practices and Performance in Shariah Firms: Agency or Stakeholder Theory?" *Asian Academy of Management Journal of Accounting and Finance* 16, no. 1: 1–34.

Post, J. E., L. E. Preston, and S. Sachs. 2002. "Managing the Extended Enterprise: The New Stakeholder View." *California Management Review* 45, no. 1: 6–28.

Pucheta-Martínez, M. C., and I. Gallego-Álvarez. 2019. "Environmental Reporting Policy and Corporate Structures: An International Analysis." *Corporate Social Responsibility and Environmental Management* 25, no. 5: 788–798.

Rastogi, S., K. Singh, and J. Kanoujiya. 2023. "Do Countries Capture Their Inclusive Growth, Sustainability, and Poverty Correctly? A

10990836, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/bse.70431 by CochraneItalia, Wiley Online Library on [01/12/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Study on Statistical Performance Indicators Defined by World Bank." *Social Responsibility Journal* 19: 1935–1951. https://doi.org/10.1108/SRJ-12-2022-0553.

Rodrigue, M., M. Magnan, and C. H. Cho. 2013. "Is Environmental Governance Substantive or Symbolic? An Empirical Investigation." *Journal of Business Ethics* 114: 107–129.

Rodríguez-Sanz, J. A., E. Vallelado, and P. Velasco. 2024. "Escaping Zombiness: Does Corporate Governance Have the Elixir of Life?" *British Journal of Management* 35: 2174–2196.

Rousseeuw, P. J. 1987. "Silhouettes: A Graphical Aid to the Interpretation and Validation of Cluster Analysis." *Journal of Computational and Applied Mathematics* 20: 53–65. https://doi.org/10.1016/0377-0427(87)90125-7.

Salancik, G. R., and J. Pfeffer. 1978. "A Social Information Processing Approach to Job Attitudes and Task Design." *Administrative Science Quarterly* 23: 224–253.

Sharma, P., P. Panday, and R. Dangwal. 2020. "Determinants of Environmental, Social and Corporate Governance (ESG) Disclosure: A Study of Indian Companies." *International Journal of Disclosure and Governance* 17: 208–217.

Shrivastava, P., and A. Addas. 2014. "The Impact of Corporate Governance on Sustainability Performance." *Journal of Sustainable Finance & Investment* 4, no. 1: 21–37.

Srivastava, M. K., and D. R. Gnyawali. 2011. "When Do Relational Resources Matter? Leveraging Portfolio Technological Resources for Breakthrough Innovation." *Academy of Management Journal* 54, no. 4: 797–810.

Tricker, R. I. 1984. *Corporate Governance: Practices, Procedures and Powers in British Companies and Their Boards of Directors*. Gower Publishing Company.

Uyar, A., C. Kuzey, M. Kilic, and A. S. Karaman. 2021. "Board Structure, Financial Performance, Corporate Social Responsibility Performance, CSR Committee, and CEO Duality: Disentangling the Connection in Healthcare." *Corporate Social Responsibility and Environmental Management* 28, no. 6: 1730–1748.

Velte, P., and M. Stawinoga. 2020. "Do Chief Sustainability Officers and CSR Committees Influence CSR-Related Outcomes? A Structured Literature Review Based on Empirical-Quantitative Research Findings." *Journal of Management Control* 31, no. 4: 333–377.

Wang, C., X. Li, H. Wen, and P. Nie. 2021. "Order Financing for Promoting Green Transition." *Journal of Cleaner Production* 283: 125415.

Weber, O. 2017. "Corporate Sustainability and Financial Performance of Chinese Banks." *Sustainability Accounting, Management and Policy Journal* 8, no. 3: 358–385.

Wöhrmann, A. 2022. "ESG—A Transformational Journey for Asset Management, Industries, Technology, and Society." In *Sustainability, Technology, and Finance*, 47–67. Routledge.

Zattoni, A., E. Dedoulis, S. Leventis, and H. Van Ees. 2020. "Corporate Governance and Institutions-A Review and Research Agenda." *Corporate Governance: An International Review* 28, no. 6: 465–487.

Zhou, G., L. Liu, and S. Luo. 2022. "Sustainable Development, ESG Performance and Company Market Value: Mediating Effect of Financial Performance." *Business Strategy and the Environment* 31, no. 7: 3371–3387.

Zollo, M., and S. G. Winter. 2002. "Deliberate Learning and the Evolution of Dynamic Capabilities." *Organization Science* 13, no. 3: 339–351.

Zumente, I., and J. Bistrova. 2021. "ESG Importance for Long-Term Shareholder Value Creation: Literature vs. Practice." *Journal of Open Innovation: Technology, Market, and Complexity* 7, no. 2: 127.

10990836, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/bse.70431 by CochraneItalia, Wiley Online Library on [01/12/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License